



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,278	03/04/2004	Dae-sik Kim	Q80119	4215
7590 06/24/2005 SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213			EXAMINER CONSILVIO, MARK J	
			ART UNIT 2872	PAPER NUMBER

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/792,278

Applicant(s)

KIM ET AL.

Examiner

Mark Consilvio

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 3-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/4/04 and 5/20/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

Applicant's election of Species I in the reply filed on 5/19/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The proprietary information disclosure statement filed 3/4/2004 fails to comply with 37 CFR 1.98(a)(1). However, the proprietary information disclosure statement has been placed in the application file, and the patent applications listed within have been provided on the PTO-892 form according to their corresponding application publications. The other information disclosure statements (IDS) submitted on 3/4/2004 and 5/20/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, these information disclosure statements are being considered by the examiner.

Drawings

This application lacks some formal drawings. The informal drawings (i.e. figs 9 and 13) filed in this application are acceptable for examination purposes only. If and when the application is allowed, applicant will be required to submit new formal drawings.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "L1" and "L3" have both been used to designate the same light beams in figs. 3 and 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3, 7, 9, and 11 rejected under 35 U.S.C. 102(b) as being anticipated by Yoder, Jr. et al. (US Patent No. 4,170,401) (herein Yoder).

With respect to claim 3, Yoder discloses an optical combining device for combining the paths of at least two light beams, comprising: a scroll direction change prism (40), disposed in the path of a first light beam which changes a scroll direction of the first light beam so as to be the same as that of a second light beam; and a beam shifter (46), disposed in the path of the second light beam, which shifts the second light beam so as to be combined with the first light beam incident from said scroll direction change prism (figs. 1 and 5 and abstract).

With respect to claim 7, Yoder discloses An optical combining device for combining a first and a second beam, comprising: an Amici prism (40), disposed in the path of the first beam, which reverses a scrolling direction of the first beam; and a beam shifter (46), disposed in the path of the second beam, which shifts the path of the second beam toward the path of the first beam (figs. 1 and 5).

With respect to claim 9, Yoder discloses said beam shifter (46) is a reflective element that shifts the path of the second beam by total internal reflection (figs. 1 and 5).

With respect to claim 11, Yoder discloses an optical combining device for combining a first and a second beam having different polarization directions, comprising: an Amici prism (40), disposed in the path of the first beam, which reverses a scrolling direction of the first beam; and a polarization beam splitter (38), disposed in the path of both the first beam, reflected from said Amici prism, and the second beam, which combines the first and second beams by selectively transmitting or reflecting the first and second beams according to the polarization direction thereof (figs. 1 and 5).

Art Unit: 2872

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-6, 8, and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Yoder, Jr. et al. (US Patent No. 4,170,401).

With respect to claim 4, Yoder discloses all the limitations of claim 3 as stated supra. Yoder also discloses the scroll direction change prism (40) comprises: a first reflection surface which receives and reflects the first light beam; a second reflection surface which is disposed at a right angle to the first reflection surface and which reflects the first light beam incident from said first reflection surface. Further, though not expressly as an integral part of the prism, Yoder discloses an additional element (38) with a third reflection surface which reflects the light beam incident from said second reflection surface in a direction parallel to that of the second light beam incident from said beam shifter (figs. 1, 3, and 5). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Yoder to combine the disclosed elements to form a single element with three reflecting surfaces since it has been held that making elements integral requires only routine skill in the art. One of ordinary skill in the art would have been motivated to do this to reduce size or loss of light due to changes between mediums with different refractive indices. *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)

With respect to claims 5 and 8, Yoder suggests or discloses all the limitations of claims 3, 4, and 7 as stated supra. Yoder does not expressly disclose said beam shifter comprises an incident surface arranged inclined with respect to an optical axis of the incident second light beam and an exit surface arranged separated a predetermined distance from and parallel to the incident surface, wherein said beam shifter shifts the second incident light beam through refraction due to the refractive index of said beam shifter (figs. 1 and 5). However, beam shifters and their use are well known to one of ordinary skill in the art. For example, the equalizing plate disclosed by Yoder could be tilted to both increase path length and shift the beam path. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Yoder to provide such a beam shifter. One of ordinary skill in the art would have been motivated to do this to simply adjust alignment of the second beam with the combining device thereby allowing for multiple geometries for the combining system and utilization of pre-made elements with unmatched optical axes.

With respect to claim 6, Yoder discloses said beam shifter comprises first and second reflection surfaces arranged inclined with respect to an optical axis of the incident light beam, wherein said beam shifter shifts the second incident light beam through total internal reflection.

With respect to claim 10, Yoder discloses all the limitations of claim 7 as stated supra. Yoder does not expressly disclose a relay lens, disposed in the path of both the first and second beams, which refracts and converges the first and second beams. However, it is well known in the art that lenses may be used to expand, collimate, or focus light. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the teachings of Yoder to provide a relay lens for refracting and converging the light beams. One of ordinary

Art Unit: 2872

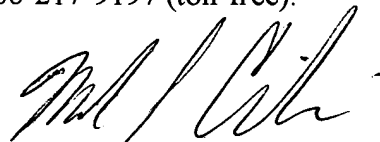
skill in the art would have been motivated to do this for a number of reasons including to allow for spatial filtering to smooth fluctuations in intensity caused by the various optical elements.

Conclusion

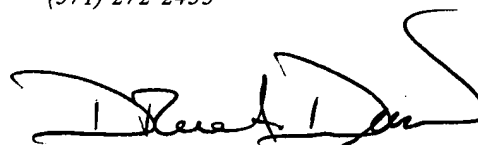
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Consilvio whose telephone number is (571) 272-2453. The examiner can normally be reached on Monday thru Friday, 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark Consilvio
USPTO Patent Examiner
Jefferson, 3C21 AU-2872
(571) 272-2453



DREW A. DUNN
SUPERVISORY PATENT EXAMINER